

MONTANA AERONAUTICS COMMISSION

Volume 21—No. 1

January, 1970

VASI INSTALLED ON HELENA AIRPORT

From: Airways Facilities Sector
Helena, Montana

To: Montana Aeronautics
Commission

On December 11, the FAA commissioned a VASI (Visual Approach Slope Indicator) system on the approach end of runway 26 at the Helena Airport. The approach angle is 2.5 degrees.

The system was purchased by Northwest Airlines, installed by the City-County Airport and operating costs and maintenance assumed by the FAA.

The visual approach slope indicator (VASI) system, when properly installed and oriented, will furnish the pilot visual approach slope information to provide safe descent guidance. The system is primarily intended for use during visual flight rules (VFR) weather conditions.

The VASI provides a definite white and red light projection along the desired descent path to the touchdown point. The light units are arranged in bars which are called the upwind and downwind bar. The light units in each bar are located on a line perpendicular to the runway center line. The downwind bar is the nearest to the runway threshold and the upwind bar is the farthest.

Each light unit projects a split

beam of light, the upper segment being white and the lower red. The transition from red to white, or vice versa, occurs over a vertical angle of approximately 1/4 degree with the light in this area being pinkish in color. The system produces a well-defined corridor of light consisting of red and white beams. When on the proper glide path the downwind bar appears white and the upwind red. If the approach is too high, both bars are seen as white while a low approach is indicated by both bars appearing red. On path is pink.

Two VASI systems were installed in October at Bozeman under the same arrangement as at Helena. These units serve runway 12 and 30 with an approach angle of 2.5 degrees.

The FAA also just recently installed a 75 MHZ Fan Marker facility at Bozeman, 3.6 miles North West of the Bozeman VOR on the 290° radial. This is an aid to the approach to runway 12.

Signed: Charles B. Story, Chief
Airways Facilities Sector

PILOTS NOTE: BROADUS

An Aeronautical Advisory Station (Unicom) is now in operation serving the Broadus area on 122.8 Mhz.

The Broadus H-Marker operates on 335 Khz and BDX signal.

AIR SERVICE CASE PAYS DIVIDENDS

By: T.A.P., Inc., Bozeman, Montana



This article attempts to describe the changes in commercial air service at the two cities of Missoula and Bozeman since the inauguration of service awarded by the Civil Aeronautics Board as a result of the Western Montana Air Service Case heard in Montana in October of 1966.

The Civil Aeronautics Board held the preliminary hearing conference for the Western Montana Air Service Case in July of 1966. Following that preliminary hearing conference a hearing was held in Montana in October of 1966. The main issue at that hearing was to hear arguments by the Montana Aeronautics Commission and the cities of Bozeman and Missoula, as well as other interested parties in Montana as to the need for improved north-south air service for the trade areas of Bozeman and Missoula. A decision was handed down by Examiner Richard A. Walsh. In that case, in July of 1967, the basic decision was to award service to Frontier Airlines for inauguration into the cities of Missoula and Bozeman, for filling the proven need for improved service to these communities established by testimony at the hearing.

(Continued Page 2 Col. 1)

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Box 1698**

Helena, Montana 59601

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AIR SERVICE—

(Continued from Page 1)

Such service was inaugurated by Frontier Airlines in October of 1967. Both of the communities of Missoula and Bozeman received four frequencies per day by Frontier Airlines. This service connected the cities of Missoula and Bozeman directly with Salt Lake City and Denver on a one plane basis. It basically provided two frequencies to and from Missoula and Bozeman to the south on a daily basis. Since that time an additional frequency has been added by Frontier Airlines at both communities. This frequency was added in August of 1969. In other words, both of the communities of Bozeman and Missoula now have five frequencies per day by Frontier Airlines. All of this service can, of course, be attributed to results of the Western Montana Air Service Case of 1966, coupled with the response of the people of Montana in terms of using this new service at Missoula and Bozeman.

Prior to the inauguration of service by Frontier Airlines in October of

1967, Northwest Airlines was the only airline serving Bozeman and Missoula. However, prior to the inauguration of this service, an additional round trip frequency was added by Northwest Airlines to both of the communities of Missoula and Bozeman in the spring of 1967. Also, in addition, since that time jet service has been inaugurated by Northwest Airlines at both of these airports as the communities have made the necessary physical improvements in the airport facilities to accommodate jet aircraft.

The result of all of this is that the city of Missoula has increased the number of flight frequencies by commercial airline from four in early 1967 to a total of 11 in 1969. Likewise, the city of Bozeman has moved from a point of having two frequencies of commercial air service in early 1967 to a total of 8 frequencies at the year end of 1968 and 9 frequencies at the end of 1969.

Certainly it is clear from an examination of the above flight frequency that the Western Montana Air Service Case has had a considerable amount of impact on improving the commercial air service at the two Montana cities of Bozeman and Missoula. It is also interesting to examine the boardings and the total origin and destination traffic at the two cities of Bozeman and Missoula since 1965.

An examination of the historical origin and destination statistics published by the Civil Aeronautics Board and boardings data furnished by the airlines to the airport managers at Bozeman and Missoula clearly indicate that the use of commercial air service at the Bozeman and Missoula airports has increased substantially in the past five years. The boardings data available at Missoula and Bozeman for 1969 revealed that the total On and Off traffic at Missoula would have been approximately 91,000 had there not been interruptions at the airport during the third quarter of 1969 for airport improvements. This 91,000 is arrived at based upon the first and second quarters of 1969 and the months of October and November. This is done because of interruptions at the airport during the months of July, August and September, due to the airport improvements. Likewise at Bozeman the total number of passengers On and

Off will be approximately 41,500 in 1969. Neither Bozeman nor Missoula are important transfer points or connecting terminals between airlines at the present time. It is therefore judged that the majority of this On and Off traffic, as reflected in the boardings data, will show up as traffic attributable to Bozeman and Missoula in the Civil Aeronautics Board survey when it is available. It could be judged that at least 90% to 95% of this gross On and Off traffic will show up in the survey as attributable to Bozeman and Missoula.

It can then be readily observed that the traffic at Missoula has grown from a level of 34,000 in 1965 and 46,000 in 1966, to nearly 90,000 in 1969. Likewise in Bozeman, the traffic has grown from 9,690 in 1965 and 12,980 in 1966 to approximately 40,000 in 1969. Indeed the only conclusion that can be drawn from this is that the commercial air service has improved substantially at both of these communities and that the people of Montana and of these communities and trade areas, that the airports served, are indeed supporting and using the commercial air service available to them. It is also very interesting to note that both Northwest and Frontier have shown significant increases in boardings in 1969 over 1968 at both Missoula and Bozeman. The percentage increase by Northwest was greater than that of Frontier at both locations. The total percentage growth at Missoula was approximately 13% for the first eleven months excluding July, August and September, with a corresponding increase for the first eleven months at Bozeman of approximately 17.5%.

It seems to be an obvious conclusion that the results for the people of the State of Montana and the people of the trade areas of Missoula and Bozeman have been great as a result of the increased service argued for and received as a result of the efforts of many in the Western Montana Air Service Case heard in Montana in October of 1966.

TAP, Inc.:

Retained Economic Consultants for MAC on scheduled air transportation matters.

ALWAYS FILE A FLIGHT PLAN



CALENDAR

January 1, Montana—1970 Pilot and Aircraft Registration due.

January 11-14, Las Vegas, Nevada—1970 Annual Meeting and Industry Showcase of the Helicopter Association of America. Headquarters, Stardust Hotel.

January 12-22, Mexico Tour—"Mexico by Private Plane in 1970". One of the four tours to Mexico—each to a different area. Low priced package—this includes rooms, meals, tips, ground transportation, all maps, RAMSA cards, route briefing, landing fees and etc. Prices starting at \$199.00. For detailed information of tour prices, complete detailed itinerary, etc., write or call: Kenneth Butler, Air Tours, Box 84, Hutchinson, Minnesota 55350. Telephone—Area Code 612-897-2661.

January 14 & 15, Helena—Montana Aeronautics Commission's Monthly Meeting.

February 9-19, Second Mexico Tour—"Mexico by Private Plane in 1970".

March 2-12, Third Mexico Tour—"Mexico by Private Plane in 1970".

March 6 & 7, Bozeman—Montana Aviation Trades Association and the Montana Airport Management Association's combined annual meeting.

April 6-16, Fourth Mexico Tour—"Mexico by Private Plane in 1970".

April 30 - May 2, Greer, South Carolina—Greenville - Spartanburg Airport—Second Annual southeastern Aviation Trade Mart.

June 12-13-14, Vergennes, Vermont—National Pilots Association Annual Summer Fly-In Weekend. Members and non-members invited.

GALLATIN FIELD MANAGER RETIRES

Edwin Iverson, Airport Manager at Bozeman's Gallatin Field, has announced his intention to retire April 1, 1970. Iverson has been Manager at that airport since 1957. Prior to that time he was a maintenance man at that airport for six years. Iverson served as President of the Montana Airport Management Association and continues to be active in community affairs in Belgrade.

The Gallatin Field Board has set February 1st as the deadline for applying for the position of Airport Manager. Application blanks are available at the Manager's office upon request and should be made to Mr. John Buttelman, Chairman, Gallatin Field Board, Willow Creek, Montana. The position has a starting salary of \$8,400 plus living quarters at the airport.

MECHANIC SEMINARS

Plans were complete and 52 applications have been accepted for the two aviation mechanic seminars being held in January. The seminars, sponsored by the Montana Aeronautics Commission, being held in Missoula, January 8, 9 and 10 and in Billings on January 11, 12 and 13.

Representatives of the leading aircraft companies, engine and component part manufacturers will participate during the 6 days.

In addition to the 52 applicants, a number of mechanics residing in the two cities have been accepted to attend on a one-day basis only, Saturday at Missoula and Sunday at Billings.



TOWER

OPERATIONS

November, 1969

	Total Operations	Instrument Operations
Billings	8,510	1,816
Missoula	7,688	726
Great Falls	7,558	1,765
Helena	3,478	488

DO get a weather briefing before taking off on any crosscountry flight.

AIRPORT NOTES



By **JAMES H. MONGER**
Assistant Director, Airports

East Glacier—Officials from the Department of Interior, National Park Service and FAA will be in Helena to meet with the Montana Aeronautics Commission at their February meeting. The purpose for the joint meeting will be two-fold. (a) Discussions will be held regarding the future expansion plans and financing methods for the Yellowstone Airport at West Yellowstone, and (b) discussion will be given regarding the Park Service land acquisition progress for the proposed airport at East Glacier and sponsorship for the proposed airport and type and category airport to be considered.

Billings Terminal Building—Construction bids have been called for and were opened by the Billings City Airport Commission on January 6th for the construction of a major addition to the terminal building. The construction bid will be awarded subject to the sale of the bonds. The construction bid calls for a number of alternates on the two million dollar project.

Bids for the sale of the airport improvement revenue bonds were opened at 1:30 p.m. on January 8.

STATISTICS

Will your **first** accident be your **last** day alive?

61/37
65/22
78/18
69/18
56/19
55/31

ACCIDENT TOTAL FATALITIES

1964 Total	61	37
1965 Total	65	22
1966 Total	78	18
1967 Total	69	18
1968 Total	56	19
1969 To-Date	55	31

FAA INSPECTORS CORNER



By LAUREN D. BASHAM
Accident Prevention Specialist
GADO #9, Helena

THE INSTRUMENT APPROACH

During the past year, there have been several aircraft accidents involving aircraft striking the ground short of the runway during instrument approaches. In one case it was determined that the pilot continued the descent after encountering a thin layer of fog, lost sight of the runway lights and struck the runway threshold, causing extensive structural damage to the aircraft. There are several fatal accidents on record which appear to have occurred under similar conditions.

Instrument approaches and landings terminate the arrival phase of most IFR operations. Instrument approaches are also the most demanding of all IFR operations in terms of pilot skill and technique. Where, in the departure or enroute phase of IFR operations, pilot fatigue is normally at a minimum, it may well be its maximum during the approach. An accompanying lower level of coordination and response is also prevalent.

It is well recognized that pilots conducting instrument approaches utilize many different visual cues as they become available during the approach. It is equally well recognized that the pilot must transit from looking inside to looking outside sometime during the approach. What is seemingly not recognized or well understood is the manner in which this transition should be accomplished and when.

To begin with, the most effective way for the pilot to reduce this transition time is by thorough pre-flight preparation. This should include familiarization with the cockpit layout—the location and direction of movement of all controls and instruments. This preparation should also include gaining a mental picture of the general layout of the radio facilities expected to be used. Finally, the pilot must study his approach plate and fully under-

stand the procedures, courses, minimum altitudes, time to pull up and missed approach. In addition, the appropriate maps and charts should be marked, folded and arranged for easy reference.

The pilot should also consider the advantage to be gained from a more efficient scanning pattern while his eyes are inside the cockpit. Instead of reading only one instrument at a time, he should try to read several instruments during the same visual sweep. When the pilot has developed a more efficient scan technique, his eyes will require less trips from inside to outside and back again. The transition time element will then be greatly reduced.

Another requirement which enters the picture is that the eyes must be focused for the outside distance involved. That is the eyes don't just naturally go to or focus on the proper distance without something to focus on. Picture the pilot sitting in the cockpit with the windshield yielding only the translucence of cloud, haze or smoke. The remedy is simple, when he looks outside, he should run his eyes to the most distant object which can be seen (which in most cases would be the wing tip). This will activate the accommodation muscles and put the eyes on distant focus. This process should be repeated at frequent intervals. The most valid reason for a reduced **transition time** is to allow the pilot to make the **right decision deliberately**, rather than the **wrong decision instantly**.

The question now arises—when do we make the transition? The answer lies in an understanding of certain recent changes in FAR 91 concerning instrument approach procedure, specifically Sections of FAR 91.116 and 91.117 regarding MDA (minimum descent altitude) and DH (decision height). Here some definitions are in order—MDA or "Minimum Descent Altitude" means the lowest altitude expressed in feet above mean sea level to which descent is authorized on final approach, without electronic glide slope information or during circle to land maneuvering on a standard instrument approach. DH or "Decision Height" means the height expressed in feet above mean sea level, at which a decision must be made during an ILS or PAR instrument approach to

either continue the approach or to execute a missed approach.

It may help the pilot to think of MDA in terms of **Time** since it involves approach procedures which require a time element flown at MDA except at VOR and H facilities located on the airport. The facility then becomes the MAP (missed approach point). MAP (missed approach point) is facility when facility is on airport. MAP for off-airport facility is usually **Time** from facility to runway threshold. MAP for ILS or PAR is point on final approach course where height of glide slope equals authorized DH.

Effective November 18, 1967 ceiling minimums are no longer prescribed in approach procedures as a landing limit. The published visibility in terms of either RVR (Runway Visual Range) or meteorological value is now the limiting factor. A pilot may now descend to the prescribed MDA or DH as appropriate to the procedure being executed without regard to the reported ceiling. FAR 91.117(b) states in part—"A pilot may not operate an aircraft below the prescribed MDA or continue an approach below the prescribed DH unless—

1. The aircraft is in a position from which a normal approach to the runway of intended landing can be made, and

2. The approach threshold of the runway, approach lights or other markings identifiable with the approach end of that runway are clearly visible to him." Further, if upon arrival at the missed approach point or decision height, or at any time thereafter, these requirements are not met, the pilot shall immediately execute the appropriate missed approach procedure.

Pilots should be aware that terrain, highways or boulevards and construction projects or other such landmarks do not meet the criteria of "other such markings" in paragraph two above.

With the above information in mind and a **CURRENT ALTIMETER SETTING**, let us now start our approach—

We report initial, slow to gear speed and get the wheels down early in the procedure turn or well out from the approach fix. Check the fuel selector, mixture full rich, boost pump on, set up approach flaps

and trim the aircraft. It is a good idea to tap the altimeter frequently during the approach to minimize the inherent frictional drag of the instrument—an altimeter error at minimums can be fatal. If we have extra radios, we should tune them to the facilities needed in case we have to pull up. Now we just hold our heading, maintain the desired descent rate and fly and wait—**nothing** can be gained by looking out the window. The airport will appear on schedule if we have done our planning well. At DH we look out momentarily and back to the panel or at MDA, we fly out our time, looking out momentarily and back to the panel. If the airport refuses to show itself clearly and permanently, at DH or time at MDA WE PULL UP AND GO TO OUR ALTERNATE.

Somewhere in this chain of events, preferably long before the decision became necessary, we should have faced the issue of what to do next—in case of a missed approach. Each of us faced with this decision might do well to realize that we have done our best on this day at this airport. If we have done our best on the first try, we are very unlikely to do better on a second. Most important of all, we have only ourselves and that personal ego to sway our decision with which we could very well con ourselves into becoming a statistic.

ATTENTION ALL REGISTERED MONTANA PILOTS!

The Montana Pilot's Flight Plan
Service Is For You!

File/Close Your Flight Plan By
Collect Call—Free!

When taking off from, or landing at, an airport within the State of Montana that does not have a FAA Flight Service Station—place a collect call to your nearest FSS and state; "This is a Collect Call—Montana Pilot Flight Plan."

GIVE THE FSS COMMUNICATION Your Current Montana Registration Number and your name—then File or Close your Plan.

ALWAYS FILE A FLIGHT PLAN
— BE SURE TO CLOSE IT —

AVIATION EDUCATION HIGHLIGHTS



By DUANE JACKSON
Aviation Education Supervisor

Last month this article highlighted the post high school aviation training available at the Missoula Technical Center. The Career Pilot Training Course in Missoula, now in its second year, is a fairly recent development.

This month I would like to focus attention on another area of post high school aviation education opportunities in Montana, that is, the School of Aeronautics and Related Trades.



Aviation Mechanic Students during classroom session on aircraft engines.

This school is located in Helena at the city-county airport, and has been an important source of skilled aviation repair personnel since 1933. The oldest aviation education program in Montana and, no doubt, one of the oldest such schools in the country, the Department of Aeronautics and Related Trades is a part of the Helena Vocational Technical Center. It is a certified FAA Airframe and Powerplant school. All work is on actual aircraft and component parts or equipment. Successful graduates of the course are prepared to

take the Federal Aviation Administration A & P examinations.

The course is available without tuition to any Montana resident who can benefit from such training. There is an entrance fee of \$50.00 for use of tools, books and materials. Housing and board are the responsibility of the student.

The staff of the school includes William Chambers, A & P; Gene Dunlop, A & P; Harold Keilman, A & P; and Bill McCurdy, A & P. Gene Dunlop also serves as a flight instructor in a ten hour pre-solo flying program available at Helena High School.

PUBLIC HEARINGS ON AIRPORT CONTROL AREAS UNDER WAY

The Federal Aviation Administration is holding public hearings in each of the 22 cities where tighter airport control area procedures have been proposed by the agency. The hearings began December 9 and will continue through January 23. The Secretary of Transportation, John A. Volpe stated, "There has been a widespread interest in these proposals and considerable misunderstanding as well. We believe a public hearing on the specific application of the proposals to individual locations, would be beneficial to all concerned."

Written comments may be submitted prior to a hearing or at a hearing. Comments submitted prior to a hearing should be addressed to the Director, Air Traffic Service, FAA, 800 Independence Avenue, S. W., Washington, D. C. 20590, and should refer to the specific city for which the hearing is being held.

Western United States hearings to be held are:

January 7, 1970—Denver, Colo.—
Holiday Inn East, 1:30 p.m.,
Aurora, Colorado.

January 9, 1970—Las Vegas, Nev.—
Convention Center, 9:00 a.m.,
Las Vegas, Nevada.

January 12, 1970—San Francisco—
Holiday Inn, 7:30 p.m., So. San
Francisco, Calif.

January 14, 1970—Seattle, Wash.—
Seattle Civic Center, 7:30 p.m.,
Seattle, Wash.

January 16, 1970—Los Angeles, Ca.—
Airport Junior High, 3:00 p.m.,
Los Angeles, Calif.

CONGRATULATIONS



FAA CERTIFICATES ISSUED RECENTLY TO MONTANA PILOTS

STUDENT

Weibert, Donald L.—Garryowen
Martin, Edison E.—Poplar

PRIVATE

Shelton, Fletcher B.—Missoula
Schott, Dale R.—Glasgow
Johnson, Douglas S.—Missoula
Turk, Augustine J.—Missoula
Billingsley, Sidney M.—Florence
Koszuta, Daniel M.—Chicago, Ill.
Duletsky, Stanley L.—Billings
Johnson, Ronald—Wolf Point
Trestler, Boyd H.—Sentinel Butte,
N. D.
Long, Eldon W.—Miles City
Deckert, Samuel R.—Richey
Heinen, Edward W.—Watford City,
N. D.
Ripley, Richard E.—Lincoln
Gaskill, Douglas W.—Olive
Wolff, Corey D.—Culbertson

COMMERCIAL

Anderson, John A.—New York,
N. Y.
Volin, Leonard M.—Columbia Falls
Borchers, Louis F., Jr.—Great Falls
Phair, James R.—Froid

INSTRUMENT

Kidd, William L.—Great Falls
Wardell, Harry W.—Billings
Scranton, Francis L.—Powell, Wyo.
Bradford, John W.—Billings

MULTI-ENGINE

Anderson, John A.—New York,
N. Y.
Kirkpatrick, Charles A. (Limited)—
Bozeman
Maxwell, Richard J.—Warm
Springs
Mellott, Thomas H.—Valier
Kreitzberg, Terry D.—Billings
Todd, Jack E.—Billings
Soare, Malcolm A.—Glendive
White, Orville L.—Aurora, Colo.

FLIGHT INSTRUCTOR

Timm, Glenn L.—Polson
Dowell, Lester R.—Bridgeport, Wn.

FLIGHT INSTRUCTOR INSTRUMENT

Sturgill, Stanley L.—Opportunity,
Wash.

BASIC GROUND INSTRUCTOR

Colman, William K.—Butte

ROTORCRAFT

Thatcher, Gary D. (Comm.)—
Missoula
Rowe, Gary W. (Instrument)—
Billings

SEAPLANE

Wiles, William L. (Comm.)—
Missoula
Smuin, Douglas K. (Comm.)—
Missoula

AIRFRAME MECHANIC

Douglas, Larry N.—Deer Lodge

REPAIRMAN

Seitz, Edward A., II (Radio)—Great
Falls
Johnson, William F. (Radiographic
X-Ray)—Missoula

FEDERAL AVIATION ADMINISTRATION ITINERARY LISTING

Airport	Jan.	Feb.	Mar.
Culbertson		4	
Glasgow		7	 4
Glendive		22	 19
Great Falls		8	 5
Lewistown			18
Miles City			19
Missoula		22	 19
Sidney		21	 18

NOTE: Provisions have been made to give private, commercial and flight examinations **ON AN APPOINTMENT BASIS ONLY** at the following FAA Flight Service Stations:

Bozeman	Lewistown
Butte	Livingston
Cut Bank	Miles City
Dillon	Missoula
	Great Falls

GADO #1 in Billings will be open **ON AN APPOINTMENT BASIS ONLY** on Saturday, January 17 and Saturday, February 21.

ATTENTION FILM USERS

The following films distributed by the Montana Aeronautics Commission will not be available until July 1970.

A FIRE CALLED JEREMIAH
MAN IN FLIGHT
EYES IN OUTER SPACE
MAN IN SPACE
LANDING ON THE MOON
FOOD FOR SPACE TRAVELERS

Several other titles are also approaching capacity scheduling so if a film is needed for a hangar or club meeting please write or call as soon as possible.

LETTERS TO THE DIRECTOR

We are again pleased to share our annual letter from Joe Lavallee, former Montana Flight Instructor from Glasgow, presently employed with the Ethiopian Airlines in Addis, Ababa, Ethiopia—

Addis Ababa, Ethiopia
December 14, 1969

Howdy:

Greeting from Africa. My how time flies! Here's another installment of my annual report to the Montana Aeronautics Commission.

We just graduated a class of student pilots and another one is following along. I don't know what the airlines is going to do with all the first officers. We graduated 15 this year and some of them have been put to work in company radio and flight control. The balance are DC-3 first officers and Boeing flight engineers.

I have three students in the new class. Most of the new group has soloed. The average time to solo is down to 35 hours compared to 53 for last year. We must be doing something right.

The highjacking fever is spreading to Ethiopia. We've had a DC-3, a DC-6 and a Boeing 707 highjacked. We got all the airplanes back. But the Ethiopians are shooting back. Featured so far have been a gun battle on the ground in Ader and one in the cockpit shortly after take-off from Madrid in a Boeing. TWA may feature in-flight movies but Ethiopian does it live.

It's difficult to get in the Christmas mood here. No snow for one thing. And for another, Ethiopian Christmas is on January 7. We celebrate both: ours and theirs. You certainly can't complain about the weather. This is the Big Sky Country. This time of the year there are never any clouds. The sky is a deep blue. There is no industry to becloud and otherwise pollute the atmosphere.

Season's greeting to all.

Joe Lavallee

Aerial photography is now able to detect not only the presence of pollutants in rivers and streams but also the concentration of pollution.

"MONTANA MOUNTAIN PASSES" BOOKLET AVAILABLE

An excellent booklet entitled "Mountain Passes in Montana's Senior Local Pilot Country" has been developed and copies have been recently distributed.

The booklet, originally compiled by: W. J. Fitzgibbons, Weather Bureau District Forecaster, Billings Montana in 1948, was reissued with revisions and additions by P. J. Mattson and others from Great Falls. The booklet was edited and expanded by Quality Control Officer, H. A. Ward, Essa-Weather Bureau, Great Falls and issued in conjunction with the Accident Prevention Program, GADO No. 9, Helena.

Copies have been forwarded to all Montana Flight Instructors to assist in familiarizing their students and other pilots with Montana's mountain passes.

Copies are being distributed to out-of-state pilots by the Montana Aeronautics Commission to assist them when flying in or through the mountains of Montana. For a great number of tourist pilots it is their first experience with flying in mountainous terrain.

A limited number of copies are available at the present time. If you feel this would be valuable information for you or an out-of-state acquaintance, requests may be directed to the FAA-GADO 9, Helena, or the Montana Aeronautics Commission, P. O. Box 1698, Helena.

A Boeing 747's baggage load could normally consist of 7000 or more pieces of luggage which if piled on top of each other, would exceed the height of the Eiffel Tower.

GADO No. 1 — Billings New Phone Numbers

The FAA's General Aviation District Office in Billings has received new phone numbers.

Call: 245-6170

or

245-6179

PUBLICATIONS AVAILABLE FROM MAC

*Airport Directory	\$ 2.00
*Aeronautical Chart	1.00
TAP Report "Survey & Analysis, Air Transportation 1960-1980"	15.00
"An Introduction to General Aeronautics" (A Text for Aviation Science Courses) By Van Deventer	8.00
**"Professionalism in the Commercial Flight School" by C. A. Lynch	.50
***"Montana and the Sky", Monthly Newsletter (Subscription included with \$1.00 Pilot Registration Fee) or	.50
*Interim Airport Systems Plan	2.00
*The Businesslike Approach to Small-Shop Work Orders by C. A. Lynch	.50

Note: All items in the first listing marked with a (*) are available to Libraries, Colleges and etc.—at no charge for single copies. Item with (**) is available on courtesy subscription to Libraries, Colleges and Aviation Organizations.

NO CHARGE ITEMS

MAC Annual Reports

Montana Aviation Laws and Regulations

Operating Rules of:

West Yellowstone Airport

Lincoln Airport

Browning Airport

Minimum Requirements for Airport Aeronautical Services

Minimum Requirements for Airport Aeronautical Services for Yellowstone Airport

Airport Leasing Guide

Weather/Flight Plan Logbook (Available to Airport Managers and Flight Operators)

Pilot Weather Log

Film Brochure

SARDA—Montana Plan for State and Regional Defense Airlift.

Cloud Charts (Available to Teachers)

How to Forecast the Weather Booklets (Available for Students).

Montana's Flying Classroom—Vo-Ag Booklet.

— AIRPORT AIDS —

Go-No-Go Charts (Available to Airport Managers/Flight Operators).

Density Altitude Charts (Available to Airport Managers/Flight Operators).

O-O-O-O-O-O-O-O-O-O

***"Montana and the Sky", By Frank W. Wiley—Beginning of Aviation in the Land of the Shining Mountains.

Deluxe Standard Edition \$10.00

Rare Collector's Edition 50.00

*** (Order from the Montana Historical Society, 225 North Roberts Street, Helena, Montana 59601).

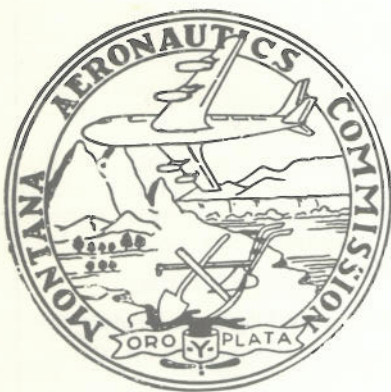
MEMBER

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE:—"To foster aviation, as an industry, as a mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in **research, development, and advancement of aviation**; to develop uniform laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states."

P. O. Box 1698
Helena, Montana 59601

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JANUARY, 1970